

REMARKS

The Office Action mailed July 17, 2008, has been received and reviewed. Claims 1 through 42 are currently pending in the application, of which claims 18, 20 through 37, and 39 through 41 are currently under examination. Claims 1 through 17, 19, 38 and 42 are withdrawn from consideration as being drawn to a non-elected invention. Claims 18, 20 through 27, 29 through 37, and 39 through 41 stand rejected. Applicants have cancelled claims 28, 32, and 35 and amended claims 18, 20, 22 through 25, 29 through 31, 33, 36, 37, and 39 through 41, and respectfully request reconsideration of the application as amended herein.

Independent claims 18 and 33 have been amended herein to recite “a secondary wick between the liquid flow channel and the primary wick; a vapor vent channel at an interface between the secondary wick and the primary wick.” Support for the amendments is found in the as-filed specification at least at paragraphs [0106], [0108], [0122], [0159], and FIGs. 1 and 10.

Dependent claims 22, 31, 39, 40, and 41 have been amended herein for clarification and to comply with the requirement of antecedent basis.

Dependent claim 20 has been amended herein to recite “wherein the primary wick has a thermal conductivity that is low enough to at least substantially prevent the formation of vapor bubbles in the liquid flow channel caused by leakage of heat from the heated wall, through the primary wick, toward the liquid barrier wall.” Support for the amendment is found in the as-filed specification at least at paragraphs [0117], [0118], and [0151].

Dependent claim 23 has been amended herein to recite “a cross section of the vapor removal channel is sufficient to maintain a pressure difference between the vapor removal channel and the liquid flow channel across the primary wick.” Support for the amendment is found in the as-filed specification at least at paragraphs [0148] and [0152].

Dependent claim 24 has been amended herein to recite “the heated wall is in intimate contact with the primary wick.” Support for the amendment is found in the as-filed specification at least at paragraph [0144].

Dependent claim 25 has been amended herein to recite “a thickness of the heated wall is selected to ensure at least substantially complete vaporization at the interface between the primary wick and the heated wall.” Support for the amendment is found in the

as-filed specification at least at paragraph [0148].

Dependent claims 29 and 36 have been amended herein to recite “wherein the secondary wick comprises an opening wherein at least one vapor bubble formed within the vapor vent channel is swept through the secondary wick.” Support for the amendments is found in the as-filed specification at least at paragraph [0122].

Dependent claim 30 has been amended herein to recite “the vapor vent channel delivers vapor that has vaporized within the primary wick away from the primary wick.” Support for the amendment is found in the as-filed specification at least at paragraph [0160].

Dependent claim 37 has been amended herein to recite “the reservoir comprises heat exchanger fins to cold bias the reservoir.” Support for the amendment is found in the as-filed specification at least at paragraph [0170].

35 U.S.C. § 112 Claim Rejections

Claims 20, 22 through 25, 27, 29 through 32, 36, 37, 39, 40 and 41 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Applicants respectfully traverse this rejection, as hereinafter set forth.

With respect to indefiniteness M.P.E.P. §2173.02 provides the following:

“Definiteness of claim language must be analyzed, not in a vacuum, but in light of: (A) The content of the particular application disclosure; (B) The teachings of the prior art; and (C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.”

Claim 20 as amended herein recites “the primary wick has a thermal conductivity that is low enough to at least substantially prevent the formation of vapor bubbles in the liquid flow channel caused by leakage of heat from the heated wall, through the primary wick, toward the liquid barrier wall.” Applicants respectfully submit that a person possessing ordinary level of skill in the art at the time of the invention could readily determine the scope of claim 20 based on the disclosure in the as-filed specification and the amendment. Specifically, paragraph [0117] discloses that “heat conduction across the primary wick 140 can cause liquid in

the core 135 to form vapor bubbles, which, if left within the core 135, would grow and block off liquid supply to the primary wick 140, thus causing the main evaporator 115 to fail.” As such, a person of ordinary skill in the art could determine a primary wick with a thermal conductivity that is low enough to at least substantially prevent heat conduction across the primary wick and to at least substantially prevent the formation of vapor bubbles.

Claims 22, 24, 29, and 36 are objected to as having insufficient basis in the claims. Applicants have amended claims 22, 24, 29, and 36 to address the Examiner’s concerns and respectfully request withdrawal of the rejection.

Claims 23, 25, 30 are objected to as containing a relative term which renders the claims indefinite. Applicants have amended claims 23, 25, and 30 to address the Examiner’s concerns and respectfully request withdrawal of the rejection.

Claims 31 and 39 are objected to as being unclear as to which previously recited element the term “which” refers. Applicants have amended claims 31 and 39 to address the Examiner’s concerns and respectfully request withdrawal of the rejection.

Claim 32 is cancelled herein.

Claims 37, 40, and 41 are objected to as being unclear as to which particular additional structure, if any, is encompassed by the limitations. Applicants have amended claims 37, 40, and 41 to clarify the additional structures encompassed by the limitations.

35 U.S.C. § 102(b) Anticipation Rejections

Anticipation Rejection Based on EP 0 210 337 to Dornier System GmbH

Claims 18, 20 through 27, 33, 34, 37, 40 and 41 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Dornier System GmbH (EP 0 210 337). Applicants respectfully traverse this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Dornier System GmbH expressly describes a capillary-assisted evaporator 1 for heat absorption and for transport of a heat medium 11 from a heat source to a heat sink and after condensation back to a heat sink. *Dornier System GmbH* at abstract and FIG 1. The evaporator 1 consists of an inner tube 2 arranged coaxially with an outer tube 3 provided with vapor channels 7. *Id.* The inner tube 2 is provided with perforations 5 with a capillary structure arranged around the perforations 5 between the inner tube 2 and the outer tube 3. *Id.*

Independent claims 18 and 33 have been amended herein to recite limitations previously set forth in claims 28 and 35. As amended, claims 18 and 33 are directed to, in part, “a secondary wick between the liquid flow channel and the primary wick; and a vapor vent channel at an interface between the secondary wick and the primary wick.” Previously presented claims 28 and 35, whose limitations are now included in independent claims 18 and 33, were not rejected to in light of Dornier System GmbH. Furthermore, Dornier System GmbH does not disclose a secondary wick between the liquid flow channel and the primary wick nor does Dornier System GmbH disclose a vapor vent channel at an interface between the secondary wick and the primary wick.

As Dornier System GmbH does not expressly or inherently describe each and every element of claims 18 and 33, Applicants respectfully request that the Examiner withdraw the rejections of independent claims 18 and 33 under 35 U.S.C. § 102(b).

Further, dependent claims 20 through 27, 32, 34, 37, 40, and 41 are allowable at least because they depend from claims 18 and 33, which are allowable. Therefore, Applicants assert that claims 20 through 27, 32, 34, 37, 40, and 41 are not anticipated by Dornier and respectfully request that the Examiner withdraw the rejection of these dependent claims under 35 U.S.C. § 102(b).

Anticipation Rejection Based on EP 0 987 509 to Matra Marconi Space France S.A.

Claims 18, 20 through 27, 29 through 31, 33, 34, 36, 37, and 39 through 41 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Matra Marconi Space France S.A. (EP 0 987 509), hereinafter referred to as “Matra Marconi”. Applicants respectfully traverse this rejection, as hereinafter set forth.

Matra Marconi expressly describes a heat transfer apparatus comprising a reversible

capillary pumped heat transfer loop for transferring heat between first and second locations. *Matra Marconi* at Col. 2, lines 11-14. The first and second locations each comprise a unit including a tubular body 4 with a capillary device formed from two separate tubular bodies including a wick 19 and a capillary link 20. *Id.* at col. 4, lines 29-31, col. 5 lines 9-11 and FIGs. 1 and 2. The capillary link 20 has pores that may define relatively course capillary passages. *Id.* at col. 5 lines 38-42.

Independent claims 18 and 33 are not anticipated by *Matra Marconi* under 35 U.S.C. § 102(b) because *Matra Marconi* does not expressly or inherently describe “a secondary wick between the liquid flow channel and the primary wick; and a vapor vent channel at an interface between the secondary wick and the primary wick” as recited in independent claims 18 and 33 as amended herein. The Examiner asserts that the pores of “the pores of the wicks 19 and 20 at the interface therebetween are at least broadly readable on the vapor vent channel.” Office Action of July 9, 2008. However, as illustrated in FIG. 2, *Matra Marconi* describes a wick 19 adjacent to a capillary link 20 with pores dispersed throughout the entirety of the wick 19 and the capillary link 20. There is nothing in *Matra Marconi* that expressly or inherently describes a vapor vent channel at an interface between the secondary wick and the primary wick. Additionally, the vapor vent channel 1045 delivers unwanted vapor away from the wick. *See* paragraph [0160] and FIG. 10 of the as-filed specification. As such, the pores in the wicks 19 and 20 cannot be a vapor vent channel since the pores would not be able to deliver unwanted vapor away from the wick since the pores are a part of the wick.

As *Matra Marconi* does not expressly or inherently describe each and every element of claims 18 and 33, Applicants respectfully request that the Examiner withdraw the rejections of independent claims 18 and 33 under 35 U.S.C. § 102(b).

Further, dependent claims 20 through 27, 29 through 31, 34, 36, 37, and 39 through 41 are allowable at least because they depend from claims 18 and 33, which are allowable. Therefore, Applicants assert that claims 20 through 27, 29 through 31, 34, 36, 37, and 39 through 41 are not anticipated by *Matra Marconi* and respectfully request that the Examiner withdraw the rejection of these dependent claims under 35 U.S.C. § 102(b).

Double Patenting Rejection Based on U.S. Patent No. 7,251,889

Claims 18, 20 through 27, 31 through 34, 37, and 39 through 41 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 4, 7, 8, 10 through 13, 17 through 19, 22, 23, 25 through 28, and 43 of U.S. Patent No. 7,251,889. Applicants have amended claims 18, 20, 22 through 25, 29 through 31, 33, 36, 37, and 39 through 41. Independent claims 18 and 33 have been amended to include limitations previously presented in dependent claims 28 and 35 which were not rejected under the judicially created doctrine of obviousness-type double patenting. In light of these amendments, Applicants request that the double patenting rejection be held in abeyance until otherwise patentable subject matter is determined. The Examiner is invited to please reexamine the claims, in light of the amendments herein, to determine the necessity of a terminal disclaimer.

ENTRY OF AMENDMENTS

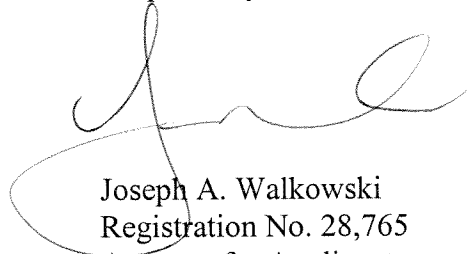
The amendments to claims 18, 20, 22 through 25, 29 through 31, 33, 36, 37, and 39 through 41 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application. Further, the amendments do not raise new issues or require a further search.

Applicants consider claims 18 and 33 to be generic, and note that upon allowance of a generic claim, claims depending therefrom in a non-elected species would also be allowable.

CONCLUSION

Claims 18, 20 through 27, 29 through 31, 33, 34, 36, 37, and 39 through 41 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, the Examiner is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,



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